

Telkonet Wins Cutting Edge PLC Implementation for Sandia's National Solar Thermal Test Facility

Sandia National Laboratories chooses Telkonet Series 5 PLC platform for its unique experimental solar engineering test site

GERMANTOWN, Md.-- Telkonet, Inc. (NYSE Alternext: TKO), a Clean Technology company that develops and manufactures proprietary energy management and SmartGrid networking technology, has won a ground-breaking contract to supply the Telkonet Series 5TM 200 Mbps powerline communications (PLC) system to the U.S. Department of Energy's National Solar Thermal Test Facility (NSTTF) in Albuquerque, New Mexico. Sandia National Laboratories, the operator of the NSTTF, required a cutting edge solution that would provide updated data connectivity for the site's solar array of 218 heliostats (individually-guided mirrors that reflect concentrated sunlight to a target located at various positions on a 200 ft tall tower. Telkonet Series 5 was selected after a comprehensive market evaluation of all viable technologies, including competing PLC solutions, demonstrating its networking capabilities for high performance, critical applications to handle the project's scale across a 9-acre site and challenging outdoor operational conditions. Telkonet's advanced PLC technology will provide the platform to communicate between a central control computer and each heliostat. Targeting coordinates will be transferred to each heliostat and heliostat position will be returned to the control computer. Installation is scheduled to commence in early 2009.

The NSTTF is the only test facility of its kind in the United States, providing experimental engineering data specializing in testing solar technologies, such as concentrating sunlight to heat a fluid that generates thermal energy to generate electricity. The facility is available to a wide cross-section of users for all types of solar and non-solar test applications, with projects including the U.S. Air Force, NASA and even applications requiring the simulation of a nuclear blast. The ability to analyze real-time data from the heliostats was a prime requirement as part of an ongoing upgrade program, as Cheryl Ghanbari, Test Engineer of Sandia National Laboratories explains, "The heliostat field has been in operation for more than 30 years. In spite of a site-wide counter poise system the field has experienced numerous direct lightning strikes that have caused a large number of component failures. The heliostat field has 480 volt AC power out to each heliostat, that is converted to 24 V DC to drive the motors that control the heliostats in azimuth and elevation, One of our main objectives was to be able to communicate utilizing the 480 V AC powerlines. After careful market research, we identified PLC as a viable option and conducted a series of tests. Telkonet provided hours of customer support and worked closely with us to optimize their equipment into our unique application."

Prime Core Systems is contracted to handle Sandia's NSTTF PLC implementation, and was

responsible for conducting the preliminary testing during December 2008 to prove Telkonet Series 5's suitability. Key issues included proving resilience and reliability, as well as consistently high bandwidth performance across the site, as Systems Engineer Juan Ortiz-Moyet explains, "Setting up the Telkonet units was very straightforward, and they performed very well across every parameter we tested. Unlike other PLC equipment we tested, Telkonet Series 5 worked predictably from the outset. We were impressed, as this is a unique application for the Telkonet equipment despite the fact that they have been well tested in the harsh substation environment." More than 240 Telkonet iBridges^(TM) and 260 inductive Telkonet Couplers^(TM), plus 10 Telkonet eXtenders^(TM) and 2 Telkonet Gateways for full redundancy will be deployed across the site. The entire upgrade will be completed by late summer 2009.

Telkonet Series 5 has been designed specifically to meet high performance, critical applications, setting unprecedented performance levels for security, speed, QoS and capacity. Telkonet Series 5 delivers a range of significant performance advances, including the following.

- Secure transmission - Incorporates hardware-based 128-bit AES encryption that meets stringent commercial requirements and provides industrial users with a highly secure remote management solution
- Incorporates additional optional physical access ports - Including both RS232 and RS485 to enable a wide range of different devices to be networked, such as non Ethernet-enabled monitoring and metering devices used in electric utility substations
- Optional support for both DC and AC applications - Meets environmental standards for both AC and DC operating environments for utility substations and the utility marketplace
- Withstands extended temperature ranges - Enables monitoring and control in tough, outdoor industrial environments
- Enhanced Quality of Service (QoS) - Handles up to 8 different communication levels, across high-speed data, Voice over IP (VoIP) and surveillance, with rate-limited bandwidth management per application
- Integrated energy management - Incorporates an optional ZigBee adapter for the initial integration of Networked Telkonet SmartEnergy, combining Ethernet connectivity with wireless-based monitoring and management

About Sandia National Laboratories

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin company, for the U.S. Department of Energy's National Nuclear Security Administration. With main facilities in Albuquerque, N.M., and Livermore, Calif., Sandia has major R&D responsibilities in national security, energy and environmental technologies, and economic competitiveness.

About Telkonet

Telkonet provides integrated, centrally-managed energy management and SmartGrid networking solutions that improve energy efficiency and reduce the demand for new energy generation. The company's energy management systems, aimed at the hospitality, commercial, government, healthcare and education markets, are dynamically lowering HVAC costs in over 125,000 rooms, and are an integral part of various utilities' green energy efficiency and rebate programs.

Primarily targeting SmartGrid and utility applications, Telkonet's patented powerline communications (PLC) platform delivers cost-effective, robust networking, with real-time online monitoring and maintenance capabilities, increasing the reliability and energy efficiency across the entire utility grid. www.telkonet.com.

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Source: Telkonet, Inc.